

# APPROVAL SHEET

CUSTOMER	CIDEV
CUSTOMER P/N	
DESCRIPTION	12V/3A
EDAC MPN	EA1024PR(L17)
EDAC MODEL NO FOR SAFETY	EA1024PR
DATE	2019-02-27
REVISION	0

APPROVED	DESIGN	PREPARE	RoHS
葉慶兵	陳鳳榮	陳鳳榮	
CONCLUSION 判定結果	APPROVED 承認	CONDITON APP'D 有條件承認	CUSTOMER'S SIGNATURE: 客戶簽章:



**翌勝電子股份有限公司**  
**EDAC POWER ELECTRONICS CO., LTD.**  
 新北市中和區建一路 150 號 11 樓之 2(E 棟)  
 TEL:886-2-82263289 FAX:886-2-82263327

**翌勝電子(蘇州)有限公司**  
 Edac Power Electronics (Suzhou) Co., Ltd.  
 江蘇省蘇州工業園區勝浦鎮常勝路 59 號  
 No.59, Chang Sheng Road, Sheng Pu,  
 Suzhou Industrial Park, Jiangsu, China  
 Tel: 512-6282-1628 Fax: 512-6282-9608

**東莞市翌勝電子有限公司**  
 廣東省東莞市鳳崗鎮金鳳凰工業區金鳳凰大道108號  
 Tel: 0769-38859898 Fax: 0769-38859897

## **SUBJECT: SCOPE OF DOCUMENT**

### **CONTAINS :**

**1-0 General Description**

**2-0. Input Requirements**

**3-0. Output Requirements**

**4-0. Reliability**

**5-0. Environment**

**6-0. Safety**

**7-0. Mechanical Characteristics**

## **1-0. General Description**

The purpose of the document is to specify a **Single phase AC input, single output** switching power supply. This specification is suitable for: **EA1024PR Series**

This product is AC to DC switching power transfer device, it can provide for a **12V/3.0A max & 36W max** DC output with constant voltage source.

This Specification defines the input, output, performance characteristics, environment, noise and safety requirement for a power supply.

## **2. Input Electrical Specification**

### **2-1. AC Input Voltage**

Maximum Voltage: 264Vac

Normal Voltage : 100~240Vac

Minimum Voltage: 90Vac

### **2-2. AC Input Frequency**

Maximum Frequency: 63Hz

Normal Frequency: 50~60Hz

Minimum Frequency: 47Hz

### **2-3. Input Current**

**a. 1.0A (Max.) @ 115Vac** input with full load.

**b. 0.5A(Max.) @ 230Vac** input with full load.

### **2-4. Energy saving standards :**

Designed to meet the following standard

Energy Efficiency level VI

#### **2-4-1 Efficiency:**

87.4% minimum at 115Vac/60Hz & 230Vac/50Hz input voltage and 25%, 50%, 75% & 100% of max output current. Meet CEC Level VI

#### **2-4-2 No Load Power Consumption:**

No Load Watt < 0.1W at 115Vac/60Hz & 230Vac/50Hz input voltage.

### **2-5. Configuration**

2-wire AC input (**Line, Neutral**)

### **2-6. Input Fuse**

The hot line side of the input shall have a fuse, rating (**T2A/250V**)

### 2-7. Inrush Current

30A at 115 Vac

60A at 230 Vac At cold start, maximum load.

### 2-8. Line Regulation

This line regulation is less than  $\pm 1\%$ , of rated output voltage @ full load.

### 2-9. Hold Up Time

8.3mSec., @ 115Vac/60Hz & 230Vac/50Hz input voltage., with full load.

### 2-10. Rise Time

50mSec., @ Rated AC input, with full load.

From 10% to 90% of output voltage.

### 2-11. Turn-ON Time

The output voltage should rise to 90% of rated output voltage in less than 3 SEC. from AC apply to 100Vac from start up.

## 3-0. Output Requirements

### 3-1. Output Voltage and Current

Output Voltage (Vdc)	Current Min.(A)	Current Max.(A)
+12V	0	3.0A

### 3-2. Load Regulation

Voltage (Vdc)	Tolerance (%)	Regulation (Vdc)
+12V	+5/, -5	11.40V~12.60V

### 3-3. Dynamic Load Regulation

$\pm 5\%$  excursion for 50% - 100% or 100% - 50% load change of DC output at any frequency up to 1KHz(duty 50%)

### 3-4. Ripple & Noise

The power supply shall not exceed the following limits on the indicated voltage for 60Hz or 50Hz ripple, Switching frequency ripple and noise and dynamic load variations measured with a 20MHz bandwidth

Output	Ripple/Noise
+12V	1.5% max. of rated output voltage

Ripple / Noise: 60Hz ripple + switching ripple and noise

Ripple & Noise are measured at the end of output cable which are added a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor

### 3-5. Over Voltage Protection

150% Max. of rated voltage

(Output clamped with zener diode, do not test with external DC source.)

### 3-6. Short-Circuit Protection

The adapter can withstand continuous short at DC output and no damage.

It will enter into normal condition if the fault condition is removed.

### 3-7. Stability

2% Max. at constant load with constant input (after **30 minutes** of operation).

### 3-8. Temperature Rise

Less than 45 °C on top/bottom case at normal AC input & 80% load of DC output at environment temperature 25 °C .

### 3-9. Drop-out (Power Line Disturbance)

Output voltage shall remain within the specified regulation range, through the absence of a line input during 1/2 cycle, at full load at 115Vac/50Hz & 230Vac/50Hz input voltage.

### 3-10. Voltage Isolation

The DC ground will be isolated from the AC neutral and AC line.

#### **4-0. Reliability**

##### **4-1. MTBF(MIL-HDBK-217F)**

The power supply shall be designed and produced to have a mean time between failure ( MTBF) of 100,000 hours at 25 degrees C

#### **5-0. Environment**

##### **5-1 Temperature**

- a. Operating : 0 to 40
- b. Storage : -20 to 85

##### **5-2 Humidity**

- a. Operating : 10 to 90 %
- b. Storage: 5 to 90 %

##### **5-3 Altitude**

From sea level to 5,000 Meter ( operation ) and 5,000 Meter ( non operation )

#### **6-0. Safety**

##### **6-1. Hi-Pot Test**

**4242Vdc 3mA 2Sec.** between primary and secondary circuit

##### **6-2. Insulation Test**

500Vdc, 3 Sec. between primary and secondary circuit  
IR should **50 MΩ.**

##### **6-3. Leakage Current**

**250uA,**at 240Vac/50 Hz

##### **6-4. Safety**

UL, CUL, TUV, CB, CE, FCC, CCC, RCM, PSE, CU, BSMI

## 6-5. EMS

Items	Specification	Reference
ESD	Contact: $\pm 4\text{KV}$	IEC 61000-4-2
	Air: $\pm 8\text{KV}$	
RS	Frequency:80~1000MHz Field Strength: 3V/M , 80% AM(1KHz)	IEC 61000-4-3
EFT	1.0 KV on input AC power ports.	IEC 61000-4-4
SURGE	Line to Line: $\pm 1\text{KV}$ (peak)	IEC 61000-4-5

## 6-6. EMI

Comply with Standards
CISPR 32, EN 55032 Class B FCC PART 15 Class B

## 7-0. Mechanical Characteristics

**7-1. Physical Size :** 73.6 mm (L) \* 42.8 mm (W) \* 32.5 mm (H)

**7-2. Enclosure material :** 94V-0 minimum

**7-3. Output Cable (Reference) :** UL1185 #16

### 7-4. Vibration Test

The vibration frequencies are set at 20Hz, with total amplitude of 1.5mm  
Along the 3 directions namely X-Y-Z. The each direction should be vibrated  
for 60 minutes, after testing no abnormal electrical or mechanical should occur.

**7-5. Drop Test** (Referencing to CSA C22.2 No.950/UL1950/UL1310/EN60950)

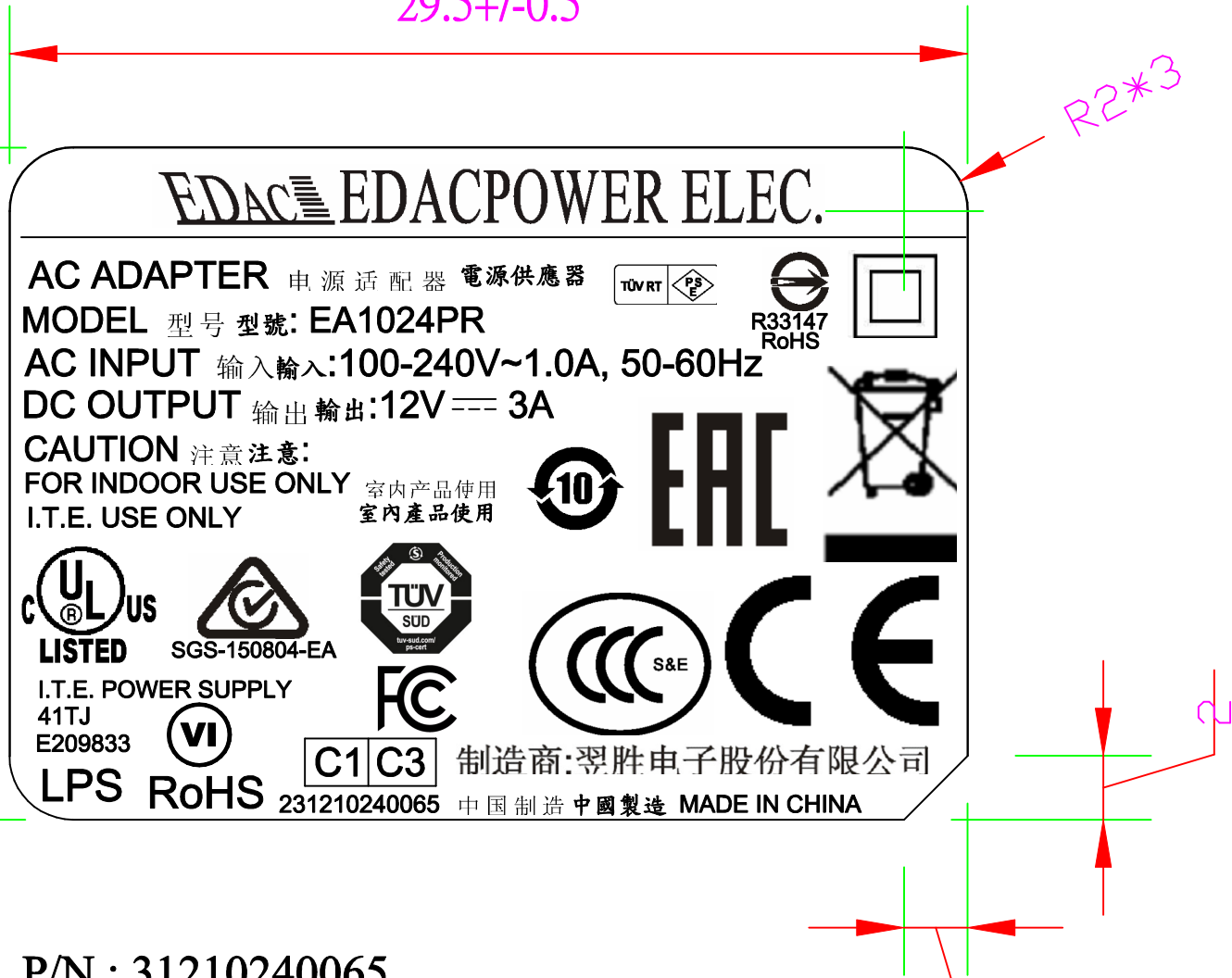
Products shall be dropped from a height of 900 mm onto a horizontal surface  
consists of hardwood at 13mm thick, mounted on two layers of plywood each  
19mm to 20mm thick, all supported on a concrete or equivalent non-resilient  
floor. Upon conclusion of test, the equipment need not be operational.

**7-6. Net Weight (Reference) :** 200g

29.5+/-0.5

R2\*3

20.5+/-0.5



P/N.: 31210240065

Background: Black color

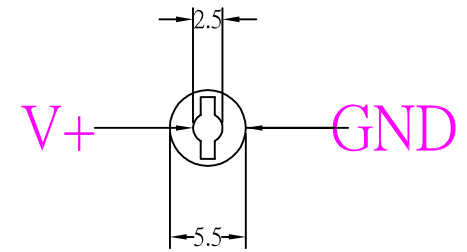
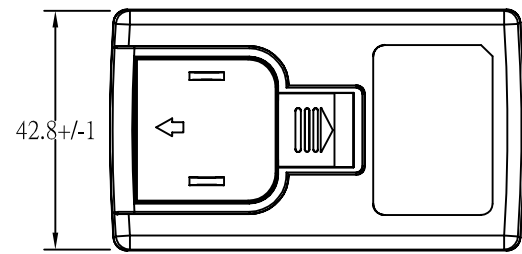
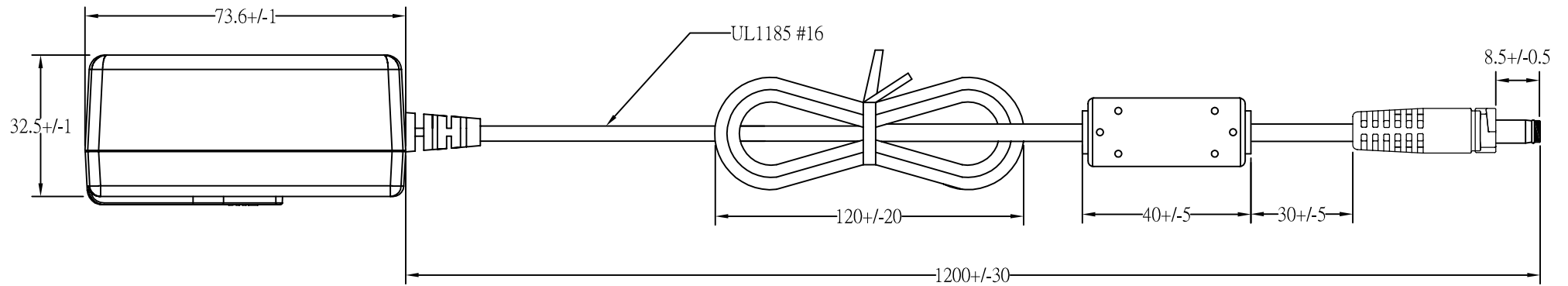
Character: Silver color

Unit: mm

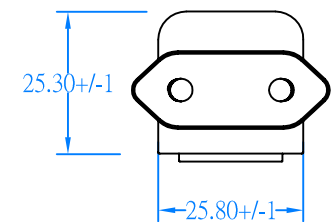
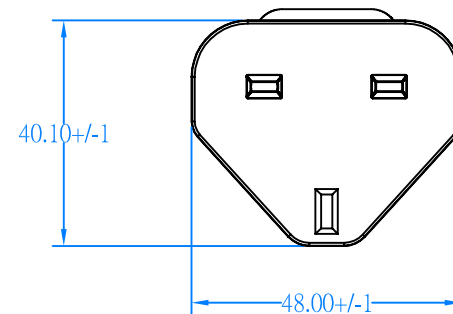
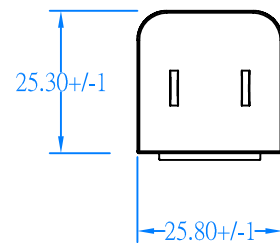
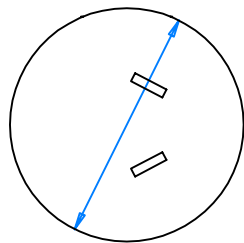
2

2





$\varnothing 41.5 \pm 1$



EDACPOWER ELECTRONICS CO., LTD.				APPROVED
MODEL	EA1024PR(L17)	UNIT	mm	DESIGNED
color	BLACK	SCALE		CHECK
cus.		DATE	2019-02-27	DRAWING L.J.YU